

# इंटरनेट

# मानक

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Mazdoor Kisan Shakti Sangathan

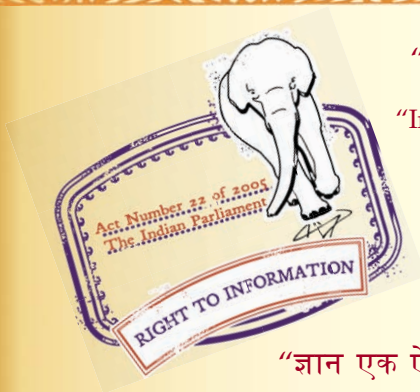
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Jawaharlal Nehru

“Step Out From the Old to the New”

IS 10608 (1998): Splines Hobs - Straight Sided [PGD 32: Cutting tools]



“ज्ञान से एक नये भारत का निर्माण”

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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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स्प्लान हाब — सीधा पार्श्वत — विशिष्ट

( पहला पुनरीक्षण )

*Indian Standard*

SPLINE HOBS — STRAIGHT SIDED —  
SPECIFICATION

( *First Revision* )

ICS 25.100.20

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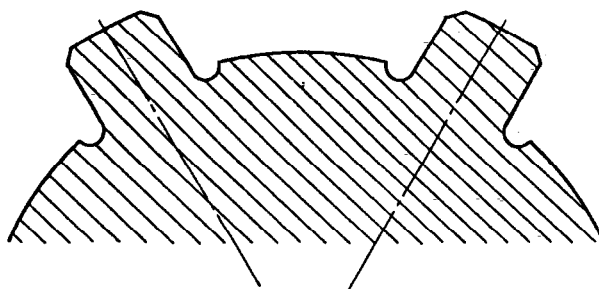
December 1998

Price Group 2

## FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Milling Cutters, Saws, Gear Cutting Tools and Broaches Sectional Committee had been approved by the Production Engineering Division Council.

These hobs are meant for generating the profile as per IS 2327 : 1993 'Straight sided splines for cylindrical shafts with internal centering — Dimensions, tolerances and verification (*first revision*)' or IS 2610 : 1989 'Power transmission — Straight sided splines for machine tools — Dimensions'. This generation process is not preferable for inside centering in some cases (*see* IS 2327 : 1993). For reference purposes, the spline profile according to IS 2327 : 1993 or IS 2610 : 1989 (type A) is given below:



This standard was published in 1983 and covered some specific requirements of spline hobs. In view of the experience gained in the industry at national and international level, the committee dealing with the subject decided to revise it and following modifications have been made in this revision:

- i) General requirements, terminology etc, covered earlier in this standard have been taken out and covered in IS 14584 : 1998 'Spline and serration hobs — Technical supply conditions'.
- ii) Sizes have been modified suitable for splines according to IS 2327 : 1993 'Straight sided splines for cylindrical shafts with internal centering — Dimensions, tolerances and verification' and IS 2610 : 1989 'Power transmission — Straight sided splines for machine tools — Dimensions'.

Other standards in this series are:

IS 14584 : 1998 Spline and serration hobs — Technical supply conditions

IS 14585 : 1998 Spline hobs — Involute sided — Specification

IS 14586 : 1998 Serration hobs — Straight sided — Specification

Other related Indian Standards are:

IS 8731 : 1978 Technical supply conditions for general purpose gear hobs

IS 8732 : 1978 Single start gear hobs with axial keyway

IS 8733 : 1978 Tolerances for single start gear hobs

This standard is based on the prevalent practice followed in industry.

# Indian Standard

## SPLINE HOBS — STRAIGHT SIDED — SPECIFICATION

### ( *First Revision* )

#### 1 SCOPE

This standard covers the grades dimensions, accuracy and other requirements for straight sided spline hobs, suitable for splines according to IS 2327 : 1993 'Straight sided splines for cylindrical shafts with internal centering—Dimensions, tolerances and verification (*first revision*)' and IS 2610 : 1989 'Power transmission — Straight sided splines for machine tools — Dimensions'.

#### 2 REFERENCES

The following standards contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	Title
2327 : 1993	Straight sided splines for cylindrical shafts with internal centering — Dimensions, tolerances and verification
2610 : 1989	Power transmission — Straight sided splines for machine tools — Dimensions ( <i>first revision</i> )
8733 : 1978	Tolerances for single start gear hobs
14584 : 1998	Spline and serration hobs — Technical supply conditions

#### 3 GRADES

Spline hobs shall be classified into following grades of accuracy:

- a) *Grade A* — Precision ground profile
- b) *Grade B* — Commercial ground profile
- c) *Grade C* — Precision unground profile

#### 4 DIMENSIONS

4.1 The dimensions of straight sided spline hobs meant for producing splines as per IS 2327 are given in Table 1.

4.2 The dimensions of straight sided spline hobs meant for producing splines as per IS 2610 are given in Table 2.

#### 5 ACCURACY

The accuracy requirements for straight sided spline hobs shall be according to IS 8733.

NOTE — Approximate module shall be defined as  $M = \frac{D}{N}$

where 'D' is major dia of spline, and

'N' is number of spline.

#### 6 GENERAL REQUIREMENTS

6.1 For requirements not covered in this standard, IS 14584 shall apply.

6.2 Gashing may be done preferably in perpendicular direction and in opposite helix of hob thread, when setting angle for hobbing (lead angle of thread) is more than 3 degrees. This gashing may also be parallel to hob axis and marked with symbol '∞' (infinity) for the gash lead and setting angle for sharpening is zero degree.

#### 7 DESIGNATION

A straight sided spline hob of grade of accuracy 'A' meant for nominal spline size  $6 \times 32 \times 38$  and confirming to this standard shall be designated as:

Straight sided spline hob IS 10608 A-6  $\times$  32  $\times$  38

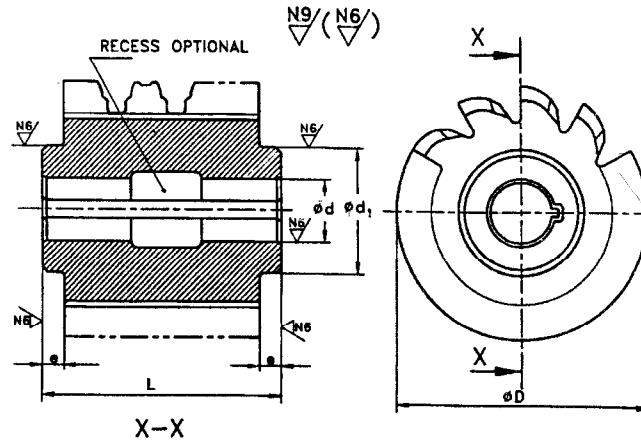
#### 8 MARKING

8.1 The product shall be marked with the following details:

- a) Manufacturer's name or trade-mark;
- b) Designation;
- c) Setting angle for hobbing;
- d) Gash lead; and
- e) Grade.

**Table 1 Dimensions for Straight Sided Spline Hobs**  
**Meant for Producing Splines as per IS 2327**  
 (Clause 4.1)

All dimensions in millimetres.



Spline Nominal Sizes as per IS 2327				$D^{(2)}$	$L^{(2)}$	$d^{(2)}$	$e$	Number of Gashes					
Light Duty Series		Medium Duty Series						Light Duty Series	Medium Duty Series				
$N^{(1)} \times d \times D$	$b$	$N^{(1)} \times d \times D$	$b$	56	46	22	3	12	14				
—	—	$6 \times 11 \times 14$	3						12				
—	—	$6 \times 13 \times 16$	3.5							12			
—	—	$6 \times 16 \times 20$	4								12		
—	—	$6 \times 18 \times 22$	5									12	
—	—	$6 \times 21 \times 25$	5	12									
$6 \times 23 \times 26$	6	$6 \times 23 \times 28$	6		12								
$6 \times 26 \times 30$	6	$6 \times 26 \times 32$	6			12							
$6 \times 23 \times 32$	7	$6 \times 28 \times 34$	7										12
$8 \times 32 \times 36$	6	$8 \times 32 \times 38$	6										
$8 \times 35 \times 40$	7	$8 \times 36 \times 42$	7					12					
$8 \times 42 \times 46$	8	$8 \times 42 \times 48$	8						12				
$8 \times 46 \times 50$	9	$8 \times 46 \times 54$	9							12			
$8 \times 52 \times 58$	10	$8 \times 52 \times 60$	10								12		
$8 \times 55 \times 62$	10	$8 \times 56 \times 65$	10									12	
$8 \times 62 \times 68$	12	$8 \times 62 \times 72$	12	12									
$10 \times 72 \times 78$	12	$10 \times 72 \times 82$	12		12								
$10 \times 82 \times 88$	12	$10 \times 82 \times 92$	12			12							
$10 \times 92 \times 98$	14	$10 \times 92 \times 102$	14				12						
$10 \times 102 \times 106$	16	$10 \times 102 \times 112$	16										12
$10 \times 112 \times 120$	18	$10 \times 112 \times 125$	18					12					
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#### NOTES

1 The dimensions of hub diameter  $d_1$  are left to the manufacturer's discretion. The diameter  $d_1$  shall be as large as possible and greater than the spacing ring. Hub diameter may be conical or cylindrical.

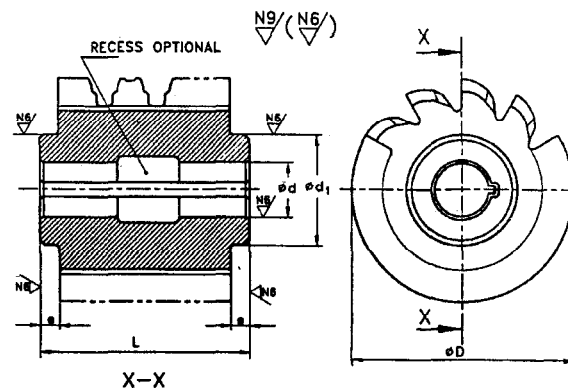
2 Number of gashes are given only for guidance and may be altered in agreement between the manufacturer and the user.

<sup>1)</sup>For spline shaft:  $N$  = Number of splines,  $D$  = Outside diameter of spline,  $d$  = Inner diameter of spline,  $b$  = Width of spline.

<sup>2)</sup>For spline hob:  $D$  = Outside diameter of hob,  $L$  = Length of hob,  $d$  = Bore diameter of hob.

**Table 2 Dimensions for Straight Sided Spline Hobs**  
**Meant for Producing Splines as per IS 2610**  
*(Clause 4.2)*

All dimensions in millimetres.



Spline Nominal Sizes as per IS 2610				$D^{(2)}$	$L^{(2)}$	$d^{(2)}$	$e$	Number of Gashes		
4 Splines		6 Splines						4 Splines	6 Splines	
$N^{(1)} \times d \times D$	$b$	$N^{(1)} \times d \times D$	$b$							
$4 \times 11 \times 15$	3	$6 \times 21 \times 25$	5	63	56	27	3	16	12	
$4 \times 13 \times 17$	4	$6 \times 23 \times 28$	6							
$4 \times 16 \times 20$	6	$6 \times 26 \times 32$	6							
$4 \times 18 \times 22$	6	$6 \times 28 \times 34$	7							
$4 \times 21 \times 25$	8	$6 \times 32 \times 38$	8	70	69					14
$4 \times 24 \times 28$	8	$6 \times 36 \times 42$	8							
$4 \times 28 \times 32$	10	$6 \times 42 \times 48$	10	80	78	32	4		20	
—	—	$6 \times 46 \times 52$	12	90	88					
$4 \times 32 \times 38$	10	$6 \times 52 \times 60$	14	100						
$4 \times 36 \times 42$	12	$6 \times 58 \times 65$	14							
$4 \times 42 \times 48$	12	$6 \times 62 \times 70$	16	112						
$4 \times 46 \times 52$	14	$6 \times 68 \times 78$	16							
—	—	$6 \times 72 \times 82$	16	125	98	40				
$4 \times 52 \times 60$	14	$6 \times 78 \times 90$	16							
$4 \times 58 \times 65$	16	$6 \times 82 \times 95$	16	140	103					
—	—	$6 \times 88 \times 100$	16							
$4 \times 62 \times 70$	16	$6 \times 92 \times 105$	20	150	133	50	5		18	
—	—	$6 \times 98 \times 110$	20							
$4 \times 68 \times 78$	16	$6 \times 105 \times 120$	20							
—	—	$6 \times 115 \times 130$	20							
—	—	$6 \times 130 \times 145$	24							

**NOTES**

**1** The dimensions of hub diameter  $d_1$  are left to the manufacturer's discretion. The diameter  $d_1$  shall be as large as possible and greater than the spacing ring. Hub diameter may be conical or cylindrical.

**2** Number of gashes are given only for guidance and may be altered in agreement between the manufacturer and the user.

<sup>1)</sup>For spline shaft :  $N$  = Number of spline,  $D$  = Outside diameter of spline,  $d$  = Inner diameter of spline,  $b$  = Width of spline.

<sup>2)</sup>For spline hob:  $D$  = Outside diameter of hob,  $L$  = Length of hob,  $d$  = Bore diameter of hob.



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### Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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